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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/815,288 | 03/31/2004 | Ara V. Nefian | 42P18124 | 8348 |

8791 7590 04/06/2007
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EXAMINER

KENDALL, CHUCK O

ART UNIT PAPER NUMBER

2192

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 04/06/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/815,288

Applicant(s)

NEFIAN ET AL.

Examiner

Chuck O. Kendall

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is in response to application filed 03/31/04.
2. Claims 1 – 26 have been examined.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Dean et al. USPN 6,374, 367 B1.

Regarding claim 1, Dean anticipates a method comprising:

selecting a phase threshold value (FIG. 2, 221 and all associated text);

receiving a plurality of sequenced buffers (FIG. 3, 300 and all associated text, also see 7:1 – 5, for sequential access);

determining a distance between centers of at least two consecutive histogram bins (10: 50 – 67, see fetch distance between instructions cycles and histograms) and ;

comparing the distance with said selected threshold value (4:1 – 11, see value 221); and

determining major execution phases of an executable process based on the comparison (4:1 – 11, show the rate of sampling as interpreted by Examiner).

Regarding claim 2, the method of claim 1, said plurality of sequenced buffers comprising samples containing addresses of a plurality of branches taken at a sampling time (6:40 – 46).

Regarding claim 3, the method of claim, further comprising:

determining a plurality of branch addresses representing a branch trace buffer, determining a plurality of consecutive branch addresses representing the branch trace buffer, determining a stable phase histogram for the plurality of consecutive branch addresses, and determining a plurality of equally spaced and non-overlapping histogram bins for all possible branch addresses (5:10 – 23).

Regarding claim 4, the method of claim 1, where a result of said determining major execution phases to signal a requisite for dynamically compiling executable code to optimize said executable code (8:27 – 37).

Regarding claims 5, the method of claim 1, further comprising:

determining whether the at least two consecutive histogram bins are in the same phase (7:25 – 35, see number of pairs and analyzing, the analyzing is done in the same phase see FIG. 4, analyzing is 403).

Regarding claim 6, the method of claim 5, said at least two consecutive histograms are in the same phase if said distance is less than one of equal to and less than said selected phase threshold value (4:1 – 20).

Regarding claim 7, the apparatus version of claim 1, see rationale above as previously discussed.

Regarding claim 8, the apparatus of claim 7, further including instructions which, when executed by a machine, cause the machine to perform operations including:

determining a plurality of consecutive branch addresses representing the branch trace buffer (6:40 – 50);

determining a stable phase histogram for the plurality of consecutive branch addresses (53 - 62);

determining a plurality of equally spaced and non-overlapping histogram bins for all possible branch addresses (5:10 – 23); and

determining major execution phases of an executable process based on the comparison (4:1 – 10).

Regarding claim 9, the apparatus of claim 8, wherein said determining major execution phases is dynamic at a predetermined periodic rate (8:35 – 37, see dynamically as instructions execute).

Regarding claim 10, the apparatus of claim 8, wherein said determining major execution phases is manually commenced (8:35 – 37).

Regarding claim 11, the apparatus version of claim 2, see rationale above as previously discussed.

Regarding claim 12, the apparatus version of claim 4, see rationale above as previously discussed.

Regarding claim 13, the apparatus version of claim 5, see rationale above as previously discussed.

Regarding claim 14, the apparatus of claim 13, said at least two consecutive histograms are in the same phase if said distance is less than one of equal to and less than said selected phase threshold value (4:1 – 10).

Regarding claims 15 and 21, a system comprising:
a processor coupled to one of a main memory and a cache memory (FIG. 1, 111);
at least one process to communicate with said memory, and a phase detector to determine major execution phases of said at least one process (FIG. 2, items 104, 130, 220 and 230).

Regarding claims 16 and 22, the system of claim 15, said determined major execution phases to determine when to re-optimize said process (FIG. 4, shows the flow going from being optimize and re-optimizing by feeding back into the sampling phase).

Regarding claims 17 and 23, the system of claim 15, said phase detector including a receiver to receive a plurality of sequenced buffers, wherein said phase detector to determine a plurality of branch addresses representing a branch trace buffer, determine a distance between centers of at least two consecutive histogram bins, where said at least two histogram bins are non-overlapping, and compare the distance with a predetermined threshold value (10: 50 – 67, see fetch distance between instructions cycles and histograms).

Regarding claims 18 and 24, the system of claim 17, said phase detector having logic to:

determine a plurality of consecutive branch addresses representing the branch trace buffer, determine a stable phase histogram for the plurality of consecutive branch addresses, and determine a plurality of equally spaced and non-overlapping histogram bins for all possible branch addresses (5:10 – 23).

Regarding claims 19 and 25, the system of claim 15, wherein said phase detector having logic to determine major execution phases dynamically at a predetermined periodic rate (8:27 – 37).

Regarding claims 20 and 26, the system of claim 17, said plurality of sequenced buffers comprising samples containing addresses of a plurality of branches taken at a sampling time (6:40 – 46).

Correspondence information

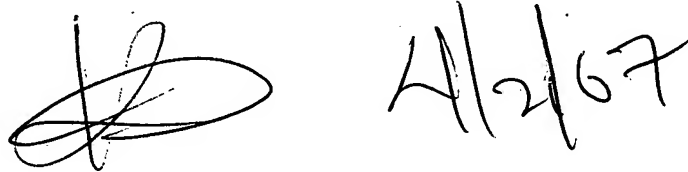
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-2723698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-2723695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2192

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck.

Handwritten signature and date. The signature is a stylized, cursive mark. The date is written as 4/2/07.